

LIST OF SIPHONAPTERA COLLECTED IN PORTUGAL.

By DR. K. JORDAN AND THE HON. N. CHARLES ROTHSCHILD, M.A.

THE knowledge of the distribution of the Siphonaptera being very limited, we deem it advisable to publish the list of the fleas we caught in Portugal, although the number of species obtained is very small. The junior author visited Lisbon and Cintra early in 1909, and the senior author spent some time at the same places in the spring of 1910, and also collected in Algarve, the most southern province of Portugal. Four of the eight species collected were new at the time of capture.

1. *Pulex irritans* L. (1758).

We obtained a number of specimens at Cintra, but were agreeably surprised at finding this pest a rarity in the houses at which we stayed in Algarve.

2. *Archaeopsylla erinacei maura* subsp. nov. (Text-fig. 1.)

One ♂ and four ♀♀ from Monchique, Algarve, an *Erinaceus europaeus*.

The specimens of *A. erinacei* collected in the Western Mediterranean countries are different from the more northern examples, more especially in the ♂♂. We have compared, besides the ♂ from Monchique (the type of *maura*), two ♂♂ from Mazagan, Morocco, another from Majorca, Balearic Islands, and three ♂♂ from Biskra, Algeria. All present the following differences:

The short manubrium of the eighth tergite is, in a lateral aspect, flat and



FIG. 1.

obtuse. The manubrium of the ninth tergite is slightly longer than in true *erinacei*. The large flap of the clasper is more than one-third longer than in *erinacei* from more northern or eastern localities, the apex being much more produced (text-fig. 1). The distance from the apex of this flap to the proximal, slanting portion of the dorsal margin is the same as the distance from the base of the spine situated at the tip of the genal process to the frontal margin of the head measured in a straight line running below the eye, whereas in true *erinacei* the length of the flap only equals the distance from that spine to the anterior edge of the eye. Moreover, the eighth abdominal tergite bears on each side a row of three bristles in all the ♂♂.

In the ♀ the eighth abdominal tergite bears laterally towards the base only one bristle, and the seventh sternite has five bristles on the two sides together.

The specimens which we have from Sardinia, Corfu, and Asia Minor do not belong to this race, but appear to us to agree perfectly with Central European *erinacei*.

3. *Ceratophyllus laverani* Roths. (1911).

A very large series of both sexes was obtained from an old bird's-nest found near Cintra on April 25th, 1910.—The nest was built about a yard and a half above the ground in a small tree. It rested on the top of the cut-off stem, and was protected by some branches. The nest had a very dilapidated look, and appeared to be a last year's nest of a Blackbird. We expected to find some Staphylinid beetles in it, and therefore put it into a bag to take it to the hotel for closer examination. But when I withdrew my hand from the bag I was not a little surprised to see a number of pale fleas crawling about my fingers. The nest was literally swarming with them.—K. J.

The species was still undescribed at the time, but we have since received it from various places in the Alps, France, and Sardinia. The true host is *Myoxus glis*. It is therefore probable that a *Myoxus* had chosen that bird's-nest as a sleeping-place, and infested it with *C. laverani*. We have also found the same species of flea in a bird's-nest in the French Alps.

4. *Ceratophyllus gallinulae* Dale (1878).

8 ♂♂, 27 ♀♀, and some larvae; Monchique, Algarve, May 10, 1910, from the nest of *Turdus merula*.

The nest was brought to us by a boy. We did not observe any fleas in it, but saw some flea-larvae underneath the wings of a dead young bird which was in the nest, and had apparently been dead only a few hours. Under a lens the larvae were seen making movements as if they were feeding on the epidermis of the bird. The above series of specimens was subsequently bred from the nest. The larvae had a blackish grey appearance, with pale intersegmental rings. When brought to the window for observation and exposed to the bright daylight, they at once ceased feeding and hastily left the bird, falling back into the nest.

5. *Ceratophyllus londiniensis* Roths. (1903).

5 ♀♀, Cintra, April 9 and 11, 1911, off *Mus musculus*.

2 ♀♀, Monchique, Algarve, May 13, 1900, off the same host.

6. *Ctenophthalmus baeticus* Roths. (1910).

Ctenophthalmus baeticus Rothschild, *Ent. Mo. Mag.* (2). xxi. p. 208. no. 2. fig. 1-3 (1910).

4 ♂♂ (incl. of type) and 11 ♀♀, Cintra, April 21 and 24, 1910, off *Mus sylvaticus*.

The mice were all trapped in the garden below Lawrence's Hotel at Cintra.

7. *Palaeopsylla atlantica* spec. nov.

9 ♂♂ and 9 ♀♀, Monchique, Algarve, May 11, 12 and 13, 1910, off *Talpa europaea*.

Our knowledge of *Palaeopsylla* dates from the publication of A. Dampf's researches on this genus.

Five species are now known, four of which were formerly united in collections under the name of *P. gracilis* Tasch.

The specimens obtained in Portugal prove to belong to a new species, the sixth of the genus. It is one of that section of *Palaeopsylla* in which the movable finger of the clasping organs of the ♂ is inserted at a considerable distance from the manubrium.

The long spine of the genal comb lies above the genal process, the apex of the latter not being covered by the spine; and the next genal spine (the second from below) is sharply pointed, resembling the long spine in shape except for the base being longer and the apex less drawn out. The spines of the pronotal comb are straight and pointed, and not at all curved upwards. The antepygial bristle is as long as the longest genal spine (measured along its hind or dorsal edge). The tibiae bear two or three minute hairs at the anterior edge, apart from the subapical pair, and no additional hairs near that edge. The hindtarsus is long, especially the first segment, which equals in length (or nearly) the distance from the tip of the long genal spine to the frontal tubercle, being one-third longer than the finger of the clasper. The only trenchant differences from the allied species are found in the modified posterior abdominal segments.

Modified Segments.—♂. The eighth sternite is beneath so excised at each side that a central ventral lobe is formed, which is strongly chitinated, and appears

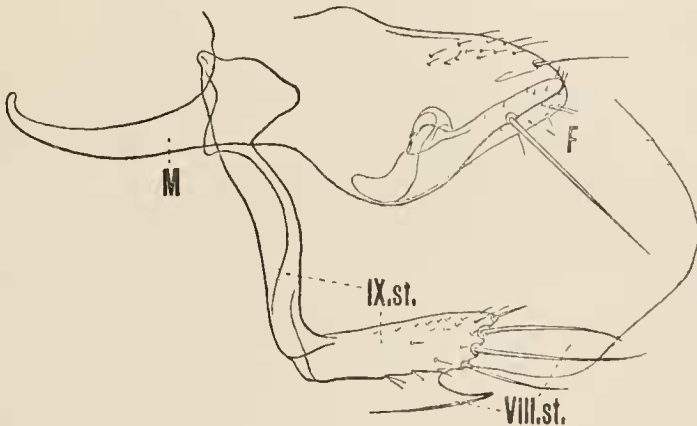


FIG. 2.

very sharply pointed in a lateral aspect (text-fig. 2). The ninth tergite projects but slightly inward. The clasper bears about fifteen small hairs near and at the dorsal margin and one longer bristle near the apex, there being one long bristle at the ventral margin, as is usual in this genus. The finger (F) is inserted at a considerable distance from the base of the manubrium, and is straight. Its apex is evenly and strongly rounded ventrally and only a little less rounded dorsally. There are three rather stout, short, and very pale bristles dorsally at the apex and three thinner ones ventrally below the apex, the ventral margin bearing in addition a small bristle on each side at the distal third, and the dorsal margin three placed at about one-fourth, one-half, and three-fourths, there being a few more small bristles near the apex on the lateral surfaces. The apex of the vertical arm of the ninth sternite is triangular with a lateral projection

posteriorly. From this dilated part downward the arm is not again widened, being practically of even width and visibly curved. The ventral (horizontal) arm is one-third shorter than the vertical one. Its dorsal margin is nearly straight and its apex so truncate obliquely that the upper angle is acute. The apical margin bears three long bristles, of which the central one is the longest and the ventral one the shortest. There is a fairly long hair at the upper angle, several similar ones along the ventral margin, and a number of short ones at the upper margin and on the side.—♀. The seventh abdominal sternite (text-fig. 3)

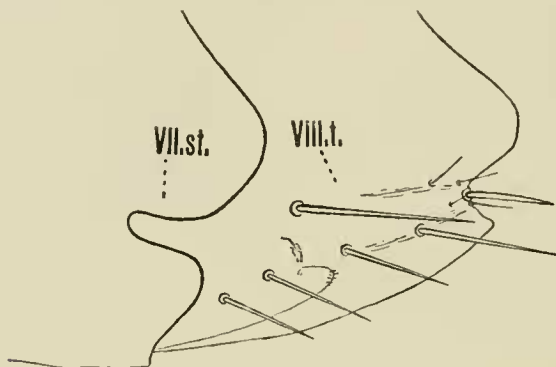


FIG. 3.

is divided by a narrow sinus, which almost extends frontad to the row of bristles, into a broad upper lobe and very much smaller, especially much shorter, lower lobe, the segment being also ventrally broadly excised, so that the lower lobes of the two sides are separated from each other by a sinus. The eighth tergite bears a ventral row of four strong bristles, there being another strong bristle above the row. The last one of the row is situated at two-thirds the way from the third bristle to the strong bristle of the apical margin. The latter bears as usual a subventral sinus, which divides the apex of the segment into a small pointed ventral lobe and a larger upper lobe, the latter being rounded in the new species. At the edge of the sinus there is one strong bristle, which is accompanied above by two small bristles and below by one.

Length: ♂ 2 mm., ♀ 2.2—2.4 mm.

8. *Leptopsylla musculi* Dugès (1832).

2 ♂♂ and 2 ♀♀, Mouchique, Algarve, May 11 and 13, 1910, off *Mus musculus* and *Mus decumanus*.

Although a number of bats were examined, no fleas were found on them. The only bat-flea known to us from Portugal is a specimen of *Ischnopsyllus intermedius* Roths. (1898) contained in the collection of the Berlin Museum.